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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,302	05/09/2001	Helmut Riedel	4147	3822

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EXAMINER

MISLEH, JUSTIN P

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 08/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/852,302

Applicant(s)

RIEDEL, HELMUT

Examiner

Justin P Misleh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 - 25 is/are rejected.
- 7) ☒ Claim(s) 1,7,9,15,17,20 and 24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5 and 7</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as “means”, “comprising”, and “said”, should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: 50 and 51 (page 11, line 27). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header

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(as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the Examiner, the Applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. **Claims 1, 7, 9, 15, 17, 20, and 24** are objected to because of the following informalities: indefinite language.

Claim 1 states therein, "wherein the pixel elements contributing to the image information are arranged irregularly, and/or their arrangement is adapted or is adaptable to the expected positions of characteristic image elements." Including the "and/or" language renders Claim 1 indefinite. For the purposes of examination, the Examiner will interpret "and/or" as "and".

Claims 7, 9, 15, 17, 20, and 24 present a similar issue and are interpreted according to the underlines shown below at each rejection.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1 – 10, 12 – 18, and 20 – 25** are rejected under 35 U.S.C. 102(e) as being anticipated by Terui et al.

6. For **Claim 1** (please see objection above), Terui et al. disclose, as shown in figures 1 – 4 and 7 and as stated in columns 2 (lines 32 – 34 and 49 – 60), 3 (lines 26 – 52), and 5 (lines 1 – 29), image recorder, in particular for recording objects or scenes in three dimensions (e.g. a bottle in figure 1 and white traffic lines in figure 3), with a detector unit (100/200) comprising a multiplicity of photosensitive pixel elements (photodiodes 601) for generating signals containing information about individual image points (image pickup area 101A/201A), and a signal output to which the signals of the pixel elements are fed for outputting the image information (14/15/203/207; see column 2, lines 56 – 67, and column 3, lines 52 – 56), wherein the pixel elements contributing to the image information are arranged irregularly (see arrangement of 11A and 201A), and their arrangement is adapted or is adaptable to the expected positions of characteristic image elements (e.g. bottle or white traffic lines; see column 2, lines 32 – 34, and column 3, lines 31 – 33).

7. As for **Claim 2**, Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 1 – 5), image recorder according to Claim 1 wherein the pixel elements can be directly addressed (by means of transfer transistor 602 and row select transistor 606).

8. As for **Claim 3**, Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 18 – 21), image recorder according to Claim 1 wherein the pixel elements can be sequentially or optionally addressed.

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9. As for **Claims 4 and 12**, Terui et al. disclose, as shown in figure 3 and as stated in column 3 (lines 36 – 38), wherein the pixel elements contributing to the image information are arranged in a V-shape or cruciform shape.

10. As for **Claims 5 and 13**, Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 1 – 29), wherein the pixel elements may be programmed in order to activate or deactivate selected pixel elements (selected by mean of row select transistor 606 and activated/deactivated by means of transfer transistor 602).

11. As for **Claims 6 and 14**, Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 1 – 29), wherein there are programmable elements (programmable by means of signal Vp) for selecting pixel elements (row select transistor 606).

12. As for **Claims 7 and 15** (please see objection above), Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 1 – 29), wherein there are switches for bridging pixels or for interrupting address lines. The selecting amplifier (605) bridges each pixel element (601) to another pixel element (601) via a common bus output line (shown but not labeled).

13. As for **Claims 8 and 16**, Terui et al. disclose, as shown in figure 7, wherein there are fusible electrical links (storage capacitor 604) for permanently activating or deactivating individual pixel elements (601). The photodiodes (604) are fused to the circuit to permanently activate each pixel element.

14. As for **Claims 9 and 17** (please see objection above), Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 1 – 29), row addressing signals (Vr) and column addressing signals (Va) for addressing the pixel elements. Although, it is not shown, it is inherent that the address signals are provided by means of column and line decoders.

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15. As for **Claims 10 and 18**, Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 18 – 21), the row select transistors (606), which are accessed by means of row address lines (Vr), are sequentially turned ON; thus, it is inherent that the line decoder is a shift register.

16. For **Claim 20**, Terui et al. disclose, as shown in figures 1 – 4 and 7 and as stated in columns 2 (lines 32 – 34 and 49 – 60), 3 (lines 26 – 52), and 5 (lines 1 – 29), image recording method, in particular for recording objects or scenes in three dimensions (e.g. a bottle in figure 1 and white traffic lines in figure 3), in which signals containing information about individual image points are generated by means of photosensitive pixel elements (601), and the signals are then made available as image information (by means of signal processors 14,/15/203/207), wherein the signals made available correspond to image points, the arrangement (see arrangement of 11A and 201A) of which is adapted to the expected positions of characteristic image elements, and which are arranged irregularly (e.g. bottle or white traffic lines; see column 2, lines 32 – 34, and column 3, lines 31 – 33).

17. As for **Claim 21**, Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 18 – 21), image recording method to Claim 20 wherein the pixel elements can be sequentially or optionally addressed.

18. As for **Claim 22**, Terui et al. disclose, as shown in figures 1 and 3, two applications (e.g. bottle and white traffic lines). In each application, various number of pixel elements are present within each row of pixels and even in the white traffic lines application, there is a discontinuity of pixel elements in a particular row. Therefore, Terui et al. disclose wherein the sequence in which the pixel elements are addressed is selected according to the application.

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19. As for **Claim 23**, Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 18 – 21), the row select transistors (606), which are accessed by means of row address lines (Vr), are sequentially turned ON; thus, the pixel elements can be address by jumping for the previous line to the next line.

20. As for **Claim 24**, Terui et al. disclose, as shown in figure 7 and as stated in column 5 (lines 1 – 29), wherein the pixel elements may be programmed in order to activate or deactivate selected pixel elements (selected by mean of row select transistor 606 and activated/deactivated by means of transfer transistor 602).

21. As for **Claim 25**, Terui et al. disclose, as shown figure 7 and as stated in column 5 (lines 1 – 29), wherein the pixel elements are dynamically reprogrammed during recording (each of the row select transistors 606 are sequentially turned ON).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. **Claims 11 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Terui et al. in view of Braun et al.

24. For **Claims 11 and 19**, Terui et al. disclose, as shown in figure 7, image pickup arrays with photodiode-based pixel elements; however, Terui et al. do not disclose wherein there are photonic mixer devices for recording three-dimensional range images. On the other hand, Braun

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et al. also disclose an image pickup array. More specifically, as shown in figure 1 and as stated in column 9 (lines 24 – 51), Braun et al. disclose, wherein the image pickup array (23) can be photonic mixer devices for recording three-dimensional range images. As stated in column 2 (lines 52 – 56), at the time the invention was made, one with ordinary skill in the art would have been motivated to include photonic mixer devices for recording three-dimensional range images, as taught by Braun et al., in the image recording device, of Terui et al., as a means protect the photosensitive from receiving stray light. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have photonic mixer devices for recording three-dimensional range images, as taught by Braun et al., in the image recording device, of Terui et al.

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:30 PM and on alternating Fridays from 7:30 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
July 24, 2004



NGOC-YEN VU
PRIMARY EXAMINER